

**National Hydrogen and Fuel Cell Codes and Standards Coordinating Committee
(NHFCSCC)**

**Wednesday, February 13, 2019
TIME: 3:00 – 4:00 pm (Eastern Standard Time)**

Minutes

Attendees

Anthony Belvin
Eric Prause
Jay Keller
Juana Williams
Justin Lewis

Justin Wu
Karen Quackenbush
Kelvin Hecht
Mike Steele
Nick Barilo

Scott Lindsay
Tommy Rockward
Yuk Wong

I. Welcome and Housekeeping Items

- Review FCHEA's anti-trust guidelines - Available on FCHEA's members only website and a copy can be provided to you on request.
- Approved the meeting agenda.
- Approved the previous meeting minutes.

II. DOE/HQ Update

Anthony Belven

April 29 – May 1st will be the DOE Annual Merit Review and will be held at the Crystal City, Virginia Hyatt just outside of Washington, D.C.

EERE Funding Opportunity Website has a Notice of Intent for a future Funding Opportunity Announcement.

III. C&S Events and Fuel Cell Safety Information

<http://www.hydrogenandfuelcellsafety.info/events/>

Karen Quackenbush

Request: technical resource updates for the Hydrogen and Fuel Cell Safety website. Any committee members who have materials they would like hosted on the website can send them to Karen Quackenbush (khall@fchea.org) or Connor Dolan (cdolan@fchea.org).

- SAE meeting in February in Torrance, CA
- GTR meeting in March 4-7 in Vancouver, Canada.
- DOE AMR in April 29 – May 1 in Crystal City, VA.
- ICHS 2019 will be held in Australia in September
- Fuel Cell Seminar 2019 November 5-7 in Long Beach, CA.

IV. Global Technical Regulations

Nha Nguyen

Jay Keller – The next GTR meeting will be held March 4-7 in Vancouver at Powertech.

V. Codes and Standards Organization Updates

IEC TC 105

Kelvin Hecht

Active US Participation

- IEC 62282-1-100 Ed.1
Fuel cell modules – Safety
 -
- IEC 62282-3-100 Ed.2 (Steve Maurer – FuelCell Energy)
Stationary fuel cell power systems - Safety
 -
 -
- IEC 62282-6-101 Ed.2 (Karen Quackenbush)
Micro fuel cell power systems – Safety
 -
- IEC 62282-6-400 Ed.1
Micro fuel cell power systems – Power & Data Interchangeability
 -
- AHG 8 (Quackenbush, Hecht)
Assessment of Existing TC105 Safety Standards

Only Superficial US Participation

- IEC 62282-8-101 Ed.1
Energy storage systems using fuel cell modules in reverse mode – Test procedures for solid oxide single cells and stacks
- IEC 62282-8-102 Ed.1
Energy storage systems using fuel cell modules in reverse mode – Test procedures for PEM single cells and stacks
 - CDV – closing date 3-8-19
- IEC 62282-8-201 Ed.1
Energy storage systems using fuel cell modules in reverse mode – Power-to-power systems - Performance
 - CDV – closing date 3-8-19
- IEC TS 62282-9-101
Evaluation methodology for the environmental performance of fuel cell power systems
based on life-cycle thinking – Streamlined life-cycle considered environment performance characterization of stationary fuel cell power systems for *residential* applications
- IEC TS 62282-9-102
Fuel cell technologies - Part 9-102: Evaluation methodology for the environmental performance of fuel cell power systems based on life cycle thinking - Product category rules for environmental product declarations of stationary fuel cell power systems and alternative systems for *residential* applications

ISO/TC 197

Karen Quackenbush/ Glenn Scheffler/Jay Keller

Karen Quackenbush – Several documents in editorial review.

Jay Keller – WG 24 moving toward FDIS. Much clean up underway. WG 15 has technical safety issues from the US. Please weigh in when you are able.

NFPA 2

Carl Rivkin

NFPA 2 ballot is out for Second Draft Report. FCHEA HCTF will meet Friday to address our ballot.

ICC

Spencer Quong

No report.

CSA

Scott Lindsey

- CHMC 2 (chemical compatibility for non-metals) is an active project to develop the first edition. The draft standard is currently out for Review. We have received minimal comments and would like to ask anyone interested in commenting to reach out to CSA. The TSC will be asked to send the document for Technical Committee ballot. Next meeting is scheduled February 26.
- HGV 4.3 (hydrogen fueling parameters) is an active project to develop the next edition to include MC formula based requirements. The Technical Subcommittee has completed dispositioning the 200+ Industry Review comments. The revisions will be incorporated into the draft over the next few days and after the TSC has an opportunity to review/approve the revised draft, the document will be sent for Technical Committee ballot.
- HGV 4.1 (dispensers) and HGV 4.9 (stations) are in development for the next edition. The respective Technical Subcommittees continue to meet to review member comments. Once the review and disposition of member comments are completed, each document will be distributed for Public/Industry Review. HGV 4.1 is meeting today, and HGV 4.9 has the next meeting planned for February 20.
- As part of the CSA Annual General Meeting, the Hydrogen Technical Committee and Technical Subcommittees will be meeting in Ottawa, Canada during June 17-20th. Additional meeting details will be circulated at a later date.
- FC 5 (Hydrogen generators) is an international adoption of ISO 16110-1. The document is still pending ANSI BSR-9 approval. Anticipate the document publishing end of March.
- FC 6 (fuel cell modules) is an international adoption of IEC 62282-2-100. Anticipate the document publishing March 7.
- CSA Binational Fuel Cell Technical Committee has been approved by the strategic steering committee.

SAE

Mike Steele

Safety Group and Interface Group met last week. Emissions task force was reactivated. Antonio Ruiz of Nikola Motors will chair to develop fuel economy standards on heavy-duty vehicles.

CGA

Rob Early

No report.

ASTM

Jennifer Hamilton

No report.

ASME

Justin Wu

New edition coming out in May.

VI. Discussion Topics

Facilitating Deployment

Carl Rivkin

No report.

H₂USA Activities

Karen Quackenbush

H₂USA is increasing its collaborating efforts with the California Fuel Cell Partnership and more information will be available in the future.

Regulatory Matrix Review and Comment

Karen Quackenbush

Latest version of the Matrix is here (updated December 31) -

<http://www.hydrogenandfuelcellsafety.info/s/FCHEA-Regulatory-Matrix-Markup-Dec-31-2018.pdf>

Please review this version of the Matrix and provide any updates to Karen Quackenbush at kquackenbush@fchea.org.

Permitting and Installation of Hydrogen Fueling Stations

CA Station Implementation

Jennifer Hamilton

Jay Keller - CA continues to aggressively roll our stations. CEC coming out with another PON to continue this activity. 2nd generation requirements for increased data are quite exciting.

CA DMS Fuel Quality / Metrology

Kevin Schnepf

No report.

Legal Metrology Standards Hydrogen Fuel Quality and Measurement

Juana Williams/Ralph Richter

(1) U.S. Weights and Measures Standards Development Process

The National Conference on Weights and Measures (NCWM) met January 13-16, 2019 to hold its 104th Interim Meeting in Charleston, SC. NIST OWM was not in attendance due

to the federal government's partial shutdown. The proposal for upgrading NIST Handbook 44 Section 3.39 Hydrogen Gas-Measuring Devices – Tentative Code to permanent status (intended to be enforced) with several modifications will be voted on for adoption July 14-18, 2019. NIST OWM is working to obtain a final draft of the proposal being considered for a vote and will provide that document to this Committee shortly after it meets in March 2019. The final draft will also be included in the NCWM Specifications and Tolerances Committee

2019 Interim Report in Publication 16 available at:

<http://www.ncwm.net/meetings/annual/publication-16> and on the NIST OWM Hydrogen: U.S. National Work Group (USNWG) website available at: <https://www.nist.gov/pml/weights-and-measures/legal-metrology-devices/hydrogen-us-national-work-group>.

The USNWG will meet shortly to provide input to the NCWM on the latest proposal for the hydrogen code.

VII. Open Discussion & Other Issues

Kelvin Hecht noted his website showed only California has an air quality standard relevant to stationary fuel cells. Now he hears Massachusetts has a more restrictive standard. He is asking whether any other states have such restrictions. None were offered.

VIII. Next Meeting –

Wednesday March 6, 3pm Eastern.